



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,766	06/06/2006	Yong Hwan Kim	930086-2028	8494
7590	07/22/2009		EXAMINER	
Ronald R. Santucci c/o Frommer Lawrence & Haug 745 Fifth Avenue New York, NY 10151			HEINCER, LIAM J	
			ART UNIT	PAPER NUMBER
			1796	
			MAIL DATE	
			07/22/2009	PAPER
			DELIVERY MODE	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/581,766	KIM ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Liam J. Heincer	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 27 May 2009.

2a) This action is **FINAL**.                            2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-17 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) 1-6 and 14-17 is/are allowed.

6) Claim(s) 7-13 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

- Certified copies of the priority documents have been received.
- Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
- Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.

5) Notice of Informal Patent Application

6) Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 7-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Gijutsu et al. (JP 11-323258).

Considering Claims 7, 9, and 10: Gijutsu et al. teaches a hardened/cured phenolic resin (¶0016) produced by the process comprising polymerization of phenolic monomers (¶0005) having unsaturated aliphatic chains (¶0005) in the presence of peroxidase biocatalyst (¶0006) and an oxidant (¶0009).

Gijutsu et al. does not teach the claimed mediator. However, the claims are product by process claims. “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted). The original specification establishes a higher yield when using the claimed mediators (Table 3). However, the original specification provides no evidence that the polymers themselves have a materially different structure. As such, Gijutsu et al. appears to teach the same material structure as that made by the claimed process.

Considering Claim 8: Gijutsu et al. teaches a coating material comprising the resin (¶0001).

Considering Claim 11: Gijutsu et al. teaches the phenolic monomer as being a plant phenolic oil (¶0005).

Considering Claim 12: Gijutsu et al. teaches the peroxidase as being of plant or fungus origin (¶0007).

Considering Claim 13: Gijutsu et al. teaches the oxidant as being hydrogen peroxide or hydroalkyl peroxide (¶0009).

#### ***Response to Amendment***

The declaration under 37 CFR 1.132 filed May 27, 2009 is sufficient to overcome the rejection of claims 1-6 and 14-17 based upon Gijutsu et al. in view of Sjøholm et al.

While the prior art of record, namely Sjøholm et al., teaches that the claimed mediators increase the oxidative ability of peroxidases, the evidence shows the claimed mediators to have an unexpectedly superior increase in yield in the claimed system. Several other known mediators have been shown to have little to no effect on the yield of the polymer (table 3,

applicants arguments pg. 5), while ethylphenothiazine and phenothiazin-10-propionic acid show large increases in the yield of the polymer in the claimed process.

***Response to Arguments***

Applicant's arguments with respect to claims 7-13 have been considered but are moot in view of the new ground(s) of rejection.

The Office sincerely apologizes for erroneously indicating in the previous action that the data provided would overcome the rejection of all the claims. Upon further review, it has been determined that although the data overcomes the rejection of the process claims, the prior art still teaches the product claims as discussed above.

***Allowable Subject Matter***

Claims 1-6 and 14-17 are allowed.

The following is an examiner's statement of reasons for allowance: While the prior art of record, namely Sjøholm et al., teaches that the claimed mediators increase the oxidative ability of peroxidases, the evidence shows the claimed mediators to have an unexpectedly superior increase in yield in the claimed system. Several other known mediators have been shown to have little to no effect on the yield of the polymer (table 3, applicants arguments pg. 5), while ethylphenothiazine and phenothiazin-10-propionic acid show large increases in the yield of the polymer in the claimed process..

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Liam J. Heincer whose telephone number is 571-270-3297. The examiner can normally be reached on Monday thru Friday 7:30 to 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/

LJH

Supervisory Patent Examiner, Art Unit 1796

July 13, 2009